AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1-10. Cancelled.

11. (Currently Amended) A method for controlling evaporators in refrigeration plants, which refrigeration plants comprise a refrigerant circuit with a compressor, a liquefier, an expansion valve, ~~and~~ an evaporator, and an internal heat exchanger connected downstream of the evaporator, wherein the evaporation process of the refrigerant from at or near a supercooled liquid state to a saturated state occurs within the evaporator and the evaporation process from a saturated state to a superheated gas state occurs within the internal heat exchanger and wherein the onset of the evaporation process controlled, whereby the refrigerant is at or near a supercooled state at the inlet of the evaporator and the evaporation pressure of the refrigerant at the inlet of the evaporator is measured and used as a first control variable, whereby ~~and~~ the refrigerant ~~supercooling~~ is in a supercooled liquid state upstream of the expansion valve and the temperature upstream of the expansion valve is measured and used as second control variable for the control of the expansion valve, so that in this way the start of evaporation is defined and controlled.

12. (Cancelled)

13. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 11, wherein the temperature of the vapor at the compressor inlet is measured, and said measured value is used to optimize this control and ensure protection for the compressor.

14. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 11, wherein the temperature at the exit of the compressor and/or the compressor oil temperature and/or the suction pressure at the compressor inlet and/or the pressure upstream of the expansion valve or downstream of the compressor are measured, and said measured values are used to optimize or protect the

compressor.

15. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 11, wherein a refrigerant is used with a predetermined phase-boundary curve in an lg (p, h) diagram, said phase-boundary curve having a left-hand rising part, a maximum and a right-hand falling part, and control is effected, such that the start of the evaporation begins near to the left-hand part of said boundary-phase curve of the lg p, h diagram for said refrigerant.

16. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 11, wherein this type of control causes the evaporator to be flooded and the degree of flooding to be determined, and wherein the temperatures of the refrigerant suction vapor at the compressor inlet and of the refrigerant liquid are measured and at the same time are monitored and controlled.

17. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 11, wherein a temperature or pressure value of the refrigerant is measured within the circuit for limiting the vapor temperature upstream of the compressor, and said measured value for limiting the vapor temperature upstream of the compressor over-controls the evaporation control and keeps the vapor temperature constant at an optimum and/or maximum value as a function of the compressor.

18. (Currently Amended) The method for controlling evaporators in refrigeration plants as claimed in claim ~~12~~ 11, wherein a refrigerant is used with a predetermined phase-boundary curve in the lg (p, h) diagram, said phase-boundary curve having a left-hand rising part, a maximum and a right-hand falling part, and wherein the optimum of the process is always in favor of the evaporator and not the IHE to achieve maximum utilization of the enthalpy in the evaporator between the left-hand and right-hand parts of the phase-boundary curves of the lg (p, h) diagram for said refrigerant and, depending on the temperature level of the IHE, with a superheating component in the evaporator.

19. (Currently Amended) The method for controlling evaporators in refrigeration plants as claimed in claim ~~12~~ 11, wherein one evaporator can be connected to one IHE, or a plurality of evaporators can be connected to one IHE or a plurality of evaporators can be connected to a plurality of IHEs, or any type of combinations thereof, to form a refrigeration system.

20. (Currently Amended) The method for controlling evaporators in refrigeration plants as claimed in claim ~~12~~ 11, wherein, depending on the combination of evaporators, IHEs, expansion valves and compressors, each injection valve and the system can be controlled with reduced measured values.

21. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 17, wherein the measured value for limiting the vapor temperature upstream of the compressor over-controls the evaporation control and keeps the vapor temperature upstream of the compressor constant at an optimum and/or maximum value as a function of the compressor.

22. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 20, wherein one measured value is controlled for each expansion valve.

23. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 20, wherein one measured value is controlled for each compressor.

24. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 20, wherein one measured value is controlled for a plurality of expansion valves.

25. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 20, wherein one measured value is controlled for a plurality of compressors.

26. (Previously Presented) The method for controlling evaporators in refrigeration plants as claimed in claim 11, wherein depending on the combination of evaporators, IHEs, expansion valves and compressors, each expansion valve and the system can be controlled with a combination of one or more measured values.